

Missouri Department of Natural Resources

Total Maximum Daily Load Information Sheet

Hinkson Creek

Waterbody Segment at a Glance:

County: Boone
Nearby Cities: Columbia
Length of impairment: 11 miles
Pollutant: Unknown
Source: Unspecified



State map showing location of watershed

TMDL Priority Ranking: Medium

Description of the Problem

Beneficial uses of Hinkson Creek (Class C portion with intermittent flow, permanent pools)

- Livestock and Wildlife Watering
- Protection of Warm Water Aquatic Life
- Protection of Human Health associated with Fish Consumption

Beneficial uses of Hinkson Creek (Class P portion with permanent flow)

- Livestock and Wildlife Watering
- Protection of Warm Water Aquatic Life
- Protection of Human Health associated with Fish Consumption
- Boating and Canoeing

Use that is impaired

- Protection of Warm Water Aquatic Life

Standards that apply

All Missouri streams are protected by general criteria contained in Missouri's Water Quality Standards 10 CSR 20-7.030 (3). The portion of the standards that apply to Hinkson Creek state:

- (A) Waters shall be free from substances in sufficient amounts to cause the formation of putrescent, unsightly or harmful bottom deposits or prevent full maintenance of beneficial uses;
- (C) Waters shall be free from substances in sufficient amounts to cause unsightly color or turbidity, offensive odor or prevent full maintenance of beneficial uses;
- (D) Waters shall be free from substances in sufficient amounts to toxicity to human, animal or aquatic life;
- (G) Waters shall be free from physical, chemical or hydrologic changes that would impair the natural biological community.

Background Information

The impaired portion of Hinkson Creek starts south of route I-70 and runs through the city of Columbia to its confluence with Perche Creek. Although Hinkson's pollutants and sources are listed as unknown, water quality problems typically associated with streams in urban areas include:

1. Larger and more frequent floods as well as lower base flows due to the increase in impervious surfaces (rooftops, paved roads and parking lots) in the watershed.
2. Increased soil erosion in construction and development areas with subsequent deposition of the soil in streams.
3. Water contamination from urban storm water flows.
4. Degradation of habitat for aquatic organisms due to the concerns listed above.
5. Degradation of aquatic habitat due to the physical alteration of stream channels and adjacent streamside (riparian) corridors. Such practices include:
 - enclosing the stream in a large pipe
 - straightening (channelizing) the stream
 - paving the stream bottom and/or banks with concrete or rip rap
 - removing trees and other permanent vegetation near streams

The Department of Natural Resources has received citizen reports regarding all five of the problems mentioned above. The department completed a one-year study of aquatic invertebrate communities in Hinkson Creek in 2002 and initiated a second study in 2003 focusing on storm water runoff. That study will continue through 2005. The goal of the present study is to identify potential pollutants and potential sources of those pollutants.

The 2002 study verified that the stream biological community in a portion of the creek is impaired. Hinkson Creek was compared to a similar sized portion of nearby Bonne Femme Creek that is relatively unimpacted by human activity, as well as to biological reference stream sites within the Moreau/Loutre ecological drainage unit. Preliminary results from the present study were released and businesses, developers and other sources are being encouraged to start taking actions to remedy the present problems and prevent future ones from occurring.

The department's Environmental Services Program used screening methods first to narrow the field of potential pollutants. They were then able to focus on possible pollutant sources. The following problems were found in this section of the creek:

- Toxicity in 33 percent of the stormwater discharges
- An eight-foot deep erosion gully from the stormwater pipe draining a road salt storage and handling facility
- Six-to-eight-foot erosion gully in a drainage below a shopping center
- Organics, including petroleum hydrocarbons and some pesticides, from some of the stormwater discharges coming off of the shopping center parking lot
- Salts from a road salt storage and handling facility and the I-70 and Rt. 63 interchange area (in February during a large snow melt)
- Sediment accumulates as the water moves downstream
- Occasional spikes of *E. coli* (an indicator of possible sewage contamination)

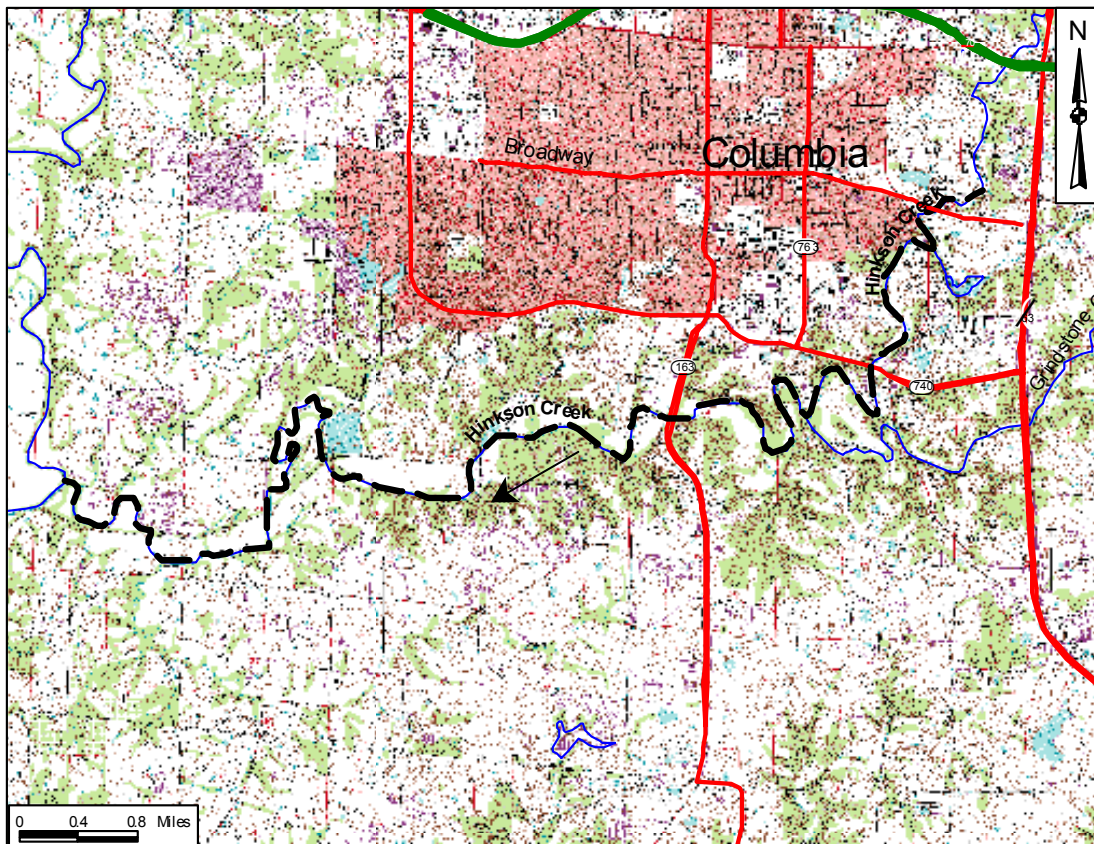
Based on these findings, the following steps are recommended:

- Improve storage and handling of road materials

- Build more, and better-designed, stormwater control structures
- Enforce Best Management Practices for erosion control at construction sites
- Implement better parking lot management (sweeping, covering stored products and cleaning up spills, for example)
- Increase the riparian corridor (the vegetation buffer along a stream) where needed
- Work with the City of Columbia in educating the community about ways everyone can prevent pollution.

Broadway to Providence streets in Columbia will be the section of the stream to be studied next.

Hinkson Creek in Boone County, Missouri



--- Impaired segment ← Direction of flow

For more information call or write:

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